jbr
environmental consultants, inc.

8160 South Highland Drive • Sandy, Utah 84093 • (801) 943-4144 • Fax (801) 942-1852

M/023/007

April 15, 2003

Mr. Wayne Hedburg
P.O. Box 145801
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114

Subject: **1st Semi-Annual 2003 Discharge Report for the North Lily Heap Leach Facility Eureka, Utah.**

Dear Mr. Hedburg:

JBR Environmental Consultants, Inc., on behalf of North Lily Mining Company is pleased to submit the enclosed report.

Sincerely,

James R. Sage III
Geologist/Environmental Analyst

Enclosure

RECEIVED
APR 16 2003
DIV. OF OIL, GAS & MINING

North Lily Heap Leach Facility

Heap Leach Discharge Report
1st Semi-Annual Report, 2003

Permit No. UGW230001
North Lily Mining Ltd. Heap Leach Facility
Juab County, Utah
April 2003

Prepared for:

State of Utah
Division of Water Quality
Department of Environmental Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870
Attention: Ground Water Protection Section

Prepared by:

JBR Environmental Consultants, Inc.
8160 South Highland Drive, Suite A-4
Sandy, Utah 84093
(801) 943-4144

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 METHODS 1
2.1 Weekly Site Survey 1
2.2 Semi- Annual Sampling Event 1

3.0 RESULTS 3
3.1 Weekly Site Survey 3
3.2 Semi- Annual Event 3

4.0 DISCUSSION AND CONCLUSIONS 3

LIST OF TABLES

2-1 Compliance Monitoring Reporting Schedule 2

2-2 Analytes 2

3-1 Water Quality Summary - Heap Leach Drain Down 4

LIST OF FIGURES

Figure 1 Site Map

LIST OF APPENDICES

Appendix A Laboratory Results

Appendix B Heap Leach Discharge

Appendix C Field Notes

1.0 INTRODUCTION

On behalf of North Lily Mining Company (NLMC), JBR Environmental Consultants, Inc. (JBR) is reporting the 1st Semi-annual results of the Heap Leach effluent monitoring performed at the North Lily Heap Leach property located 5 miles south of Eureka, Utah, on Highway 6 (**Figure 1**). The effluent monitoring was performed as part of the stipulations stated in the Final Ground Water Discharge Permit No. UGW230001. This report includes a discussion of the field and laboratory activities performed to date. The most recent laboratory results are included in **Appendix A** and the latest discharge data are included in **Appendix B**.

2.0 METHODS

2.1 Monthly Site Survey

A JBR associate visits the North Lily site monthly to conduct a site-specific survey of the property. The site survey consists of: monitoring the water flow (discharge) at the upper distribution box, visual observations of the discharge water, inspection of the property and the perimeter fence, observation of the soil conditions (any signs of erosion), and examination of the vegetation growth in the reclaimed areas.

Monitoring of the upper distribution box consists of removing three covers placed on top of the distribution box to enable a visual inspection of the leachate from the heap as it enters the distribution box. Once a visual observation has been made and noted, the discharge rate is measured using a one-gallon container and a stopwatch.

2.2 Semi-Annual Sampling Event

The sampling events are conducted on a semi-annual schedule as shown in **Table 2-1** and tested for the analytes listed in **Table 2-2**. The events consist of a site survey of the North Lily property and the sampling of the discharge water at the upper distribution box. The three protective covers are removed to allow access to the inflowing discharge and an observation of the water is made and noted. Using a laboratory supplied 1-quart bottle, the discharge sample is collected and placed into the 1, 1 liter and 3, 0.5 liter laboratory supplied sample bottles. The sample bottles are then placed into a cooler containing ice, pending the delivery to Chemtech-Ford Analytical Laboratories for analysis. The leachate sample bottles are stored and transported using chain-of-custody procedures.

Table 2-1 Compliance Monitoring Reporting Schedule

Semi-Annual Period	Report Due Date
1st (January, February, March)	April 15th
2nd (July, August, September)	October 15th

Table 2-2 Analytes

Parameters	UGWQS	Parameters	UGWQS
pH	6.5 - 8.5	Calcium (mg/L)* or ***	NS
Conductance (umhos/cm)*	NS	Chromium (mg/L) ****	0.1
Alkalinity as Bicarbonate (mg/L)*	NS	Copper (mg/L)****	1.3
Total Hardness (mg/L)*	NS	Magnesium (mg/L)* or ****	NS
Chloride (mg/L) *	NS	Manganese (mg/L)****	NS
Cyanide, Amenable to Cl_2 (mg/L)**	NS	Potassium (mg/L)*	NS
Cyanide, Total (mg/L)**	NS	Sodium (mg/L)*	NS
Cyanide, WAD (mg/L)**	0.2 (free)	Zinc (mg/L)****	5.0
Fluoride (mg/L)*	4.0	Arsenic (mg/L)* or ****	0.05
Nitrite, Nitrogen (mg/L)***	1.0	Cadmium (mg/L)****	0.005
Nitrate + Nitrite Total (mg/L) ***	10.0	Mercury (mg/L)****	0.002
Sulfate (mg/L)*	NS	Lead (mg/L)****	0.015
Barium (mg/L)* or ***	2.0	Selenium (mg/L)* or ****	0.05
TDS (mg/L)*	NS	Silver (mg/L)****	0.1

Notes: (UGWQS is Utah Ground Water Quality Standard and NS indicates that there is not a UGWQS
* = 1Liter bottle untreated
** = 0.5 Liter bottle treated with NaOH
*** = 0.5 Liter bottle treated with H_2SO_4 (nutrients)
**** = 0.5 Liter bottle treated withHNO_3 (metals)

3.0 RESULTS

3.1 Weekly Site Survey

The weekly/monthly site visits have shown a steady decrease in heap leach mound discharge since July of 2000. Recently, the leachate discharge has dropped below 2.0 gpm in a steady decrease and is now at or below 1.0 gpm depending on slight fluctuations due to weather.

3.2 Semi-Annual Sampling Event

JBR visited the site on March 22, 2003 to sample the heap leach discharge effluent at the upper distribution box. The results of this sampling event along with the previous sampling results have been compiled and shown on **Table 3-1**. The laboratory reports and chain-of-custody documents for the 1st Semi-Annual sampling event can be found in **Appendix A** while the field notes can be found in **Appendix C**.

In most cases, the 1st Semi-Annual results show that the concentrations of the parameters remained similar to, or below, those reported in the previous samples with some increases in a few parameters which can possibly be attributed to the lack of precipitation caused diluting effects. The effluent still exhibits a slight yellowish tinge but does not contain any visible particulates.

4.0 DISCUSSION AND CONCLUSIONS

Sampling data shown in **Table 3-1** indicate that the overall concentrations present in the heap leach drain down continue to diminish in response to natural processes. Occasional increases in contaminant concentrations may be expected over time in response to the heterogeneities in the heap leach mound discharge. It is expected that the natural processes as well as the reclamation work conducted at the site will contribute to the overall decrease in discharge volume and contaminant concentrations in the future.

Table 3-1. Water Quality Summary - Leach Pad Draindown Fluid

North Lily Mining Company Silver City Facility

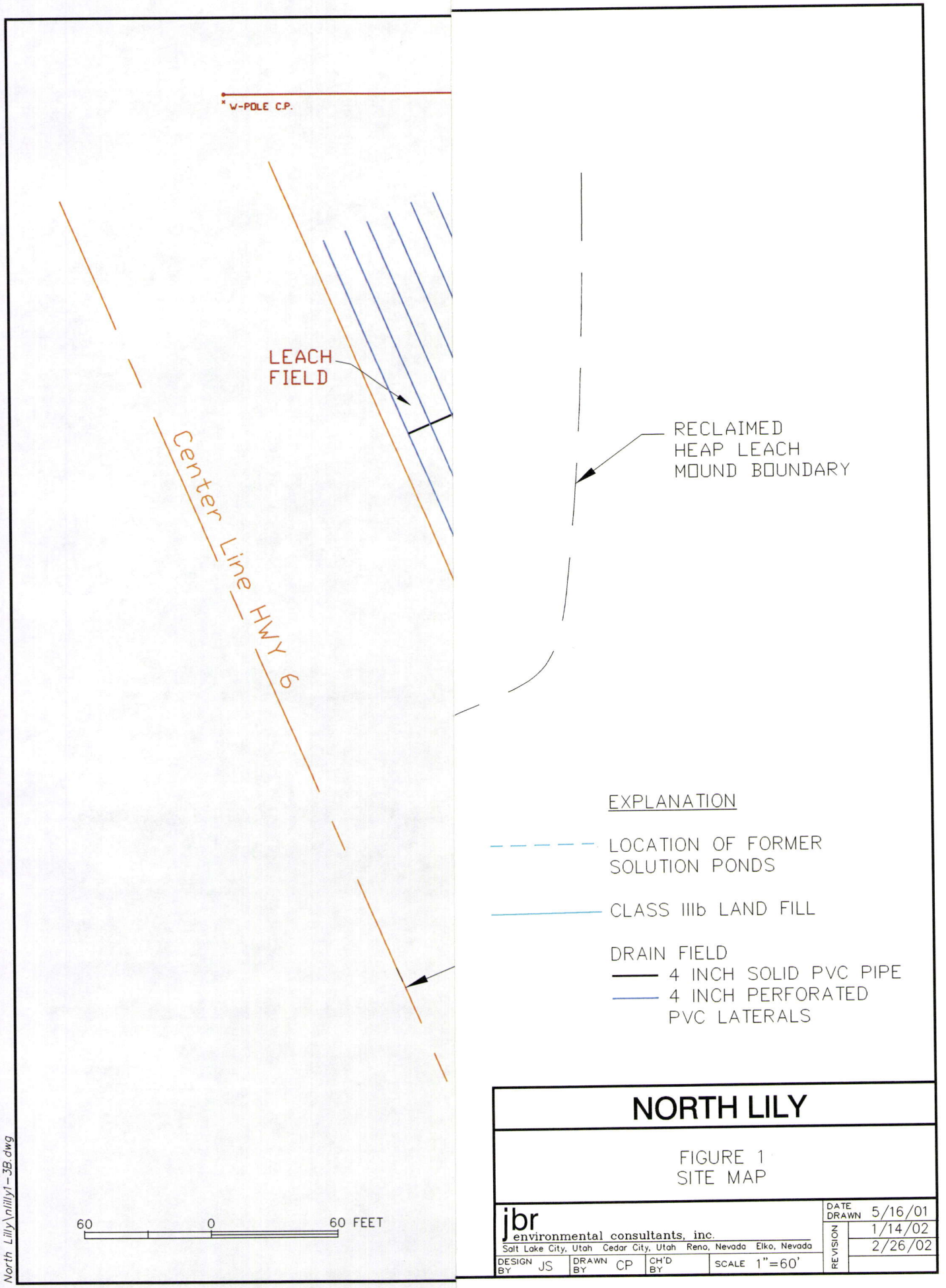
Date	??-99	Apr-00	Aug-00	May-01	Aug-01	Nov-01	Mar-02	May-02	Sep-02	Nov-02	Mar-03	Utah GroundWater Quality Standard
Sampled by	DWQ	DWQ	JBR	JBR	JBR	JBR	JBR	JBR	JBR	JBR	JBR	
Parameter												
pH	9.1	8.7	8.1	8.2	7.8	7.6	7.5	7.5	7.4	7.4	7.3	6.5-8.5
Conductance (umhos/cm)	23,000	22,000	23,300	22,000	19,000	21,000	20,000	20,000	20,000	20,000	17,000	NS
TDS (mg/l)	19,510	18,358	20,000	NA	NA	NA	NA	NA	NA	NA	NA	NS
Alkalinity as Bicarbonate (mg/l)	364	248	388	280	360	350	320	330	340	290	280	NS
Total Hardness (mg/l)	1,409.8	1,296.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
Chloride (mg/l)	2,125	2,025	2,220	2,100	1,900	1,900	1,800	1,700	1,800	1,700	1,500	NS
Cyanide, Amenable to Cl_2 (mg/l)	20.865	34.87	18.8	16	4.3	2.8	2.6	0.61	1.6	0.99	0.84	NS
Cyanide, Total (mg/l)	20.9	35	19.0	16	4.4	3.1	2.71	0.65	1.63	0.99	0.87	NS
Cyanide, WAD (mg/l)	NA	NA	14.40	12	0.52	0.42	0.53	0.42	0.74	0.47	0.16	0.2 (free)
Fluoride	NA	NA	6.7	5.6	3.2	3.2	3	2	2	1.7	2	4.0
Nitrite, Nitrogen mg/l)	NA	NA	51	57	81	130	130	130	120	100	94	1.0
Nitrate + Nitrite Total (mg/l)	124	2,110	145	160	280	310	500	500	540	570	550	10.0
Sulfate (mg/l)	11,000	4,560	10,200	11,000	7,800	8,000	7,600	7,100	6,900	6,400	6,200	NS
Barium (mg/l)	0.015	ND	0.010	0.045	0.015	0.012	0.012	0.013	0.015	0.013	0.012	2.0
Calcium (mg/l)	539	481	350	280	400	410	420	440	420	450	470	NS
Chromium (mg/l)	0.009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
Copper (mg/l)	5.70	0.332	19	15	3.1	2.6	1.9	2.0	3.4	2.7	2.0	1.3
Magnesium (mg/l)	15.8	0.234	29	110	48	53	64	61	62	69	76	NS
Manganese (mg/l)	0.130	0.110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
Potassium (mg/l)	297	293	310	260	240	220	190	190	170	180	160	NS
Sodium (mg/l)	5,570	5,500	5,600	5,100	5,100	4,900	4,500	4,400	4,800	4,800	4,200	NS
Zinc (mg/l)	91	ND	0.42	0.48	1.4	2.2	3.2	3.2	2.5	3.6	4	5.0
Arsenic (mg/l)	0.900	76	0.2464	0.17	0.14	0.17	0.17	0.17	0.15	0.094	0.013	0.05
Cadmium (mg/l)	ND	ND	0.0076	0.006	0.0097	0.021	0.026	0.030	0.030	0.025	0.035	0.005
Mercury (mg/l)	NA	0.089	ND	0.019	0.015	0.0060	0.0072	0.0060	0.0057	0.0037	0.0043	0.002
Lead (mg/l)	0.076	0.009	0.1581	0.2	0.085	0.18	0.28	0.39	0.41	0.28	0.28	0.015
Selenium (mg/l)	0.200	0.014	0.2707	0.15	0.12	0.20	0.17	0.17	0.17	0.13	0.14	0.05
Silver (mg/l)	0.370	0.029	0.3147	0.64	0.08	0.069	0.98	0.075	0.061	0.035	0.023	0.1

NA = "Not Analyzed"

ND = "Not Detected"

NS = "No Standard"

Figure



NORTH LILY

FIGURE 1
SITE MAP

jbr environmental consultants, inc.
Salt Lake City, Utah Cedar City, Utah Reno, Nevada Elko, Nevada

DESIGN BY	DRAWN BY	CH'D BY	SCALE
JS	CP		1"=60'

REVISION	DATE DRAWN
	5/16/01
	1/14/02
	2/26/02

North Lily\nlilly1-3B.dwg

Appendix A

Laboratory Results

REC'D MAR 2 7 2003

Date: 3/26/03

JBR Consultants
attn. Jim Sage
8160 South Highland Drive, Ste. A-4
Sandy, UT 84093

Project: NLILY-01

Project Group No. 59243
Date Sample(s) Submitted: 3/14/03

This is the final report for project 59243 and contains 3 pages of information in addition to attachments. Individual pages or sections of this report may not be separated when using the information for regulatory compliance.

The analyses presented on this report were performed in accordance with National Environmental Laboratory Accreditation Program (NELAP), Section 5.13.

Please feel free to contact us at (801) 262-7299 or (801) 262-7378 (fax) if you have questions or comments regarding this report. Our web site is located at **www.chemtechford.com**.

Dave Gayer
Laboratory Director
dave@chemtechford.com

Linda Daniels
Customer Representative
linda@chemtechford.com

Approved By: _____
Dave Gayer, Laboratory Director

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

Lab No: 03-U002168
Report Date: 3/26/03

JBR Consultants
attn. Jim Sage
8160 South Highland Drive, Ste. A-4
Sandy, UT 84093

CERTIFICATE OF ANALYSIS

Sample Description: Upper Dist Box
Project: NLILY-01
Sample Matrix: WASTE WATER
Lab Group No: 59243
Date/Time Sampled: 3/14/03 , 13:15
Date/Time Received: 3/14/03 , 15:00
Sample Note(s):

Sample received on ice.

PARAMETER / UNITS	RESULT	MRL	DATE ANALYZED	METHOD	ANALYST
INORGANIC PARAMETERS					
Alkalinity,as Bicarbonate, mg/L	280	1	3/25/03 14:00	SM 2320B	CSM
Alkalinity, as Carbonate, mg/L	< 1	1	3/25/03 14:00	SM 2320B	CSM
Alkalinity, Total (CaCO3), mg/L	230	1	3/25/03 14:00	SM 2320B	CSM
Chemical Oxygen Demand, mg/L	160	10	3/24/03 13:30	HACH 8000	AK
Chloride (IC), mg/L	1,500	50	3/14/03 17:00	EPA 300.0	CSM
Conductance, Specific, umhos/cm	17,000	1	3/20/03 12:30	EPA 120.1	KJM
Cyanide, Amenable to Cl2, mg/L	0.84	0.002	3/18/03 11:00	ASTM D2036	PNM
Cyanide, Total, mg/L	0.87	0.02	3/18/03 11:00	ASTM D2036	PNM
Cyanide, WAD, mg/L	0.16	0.004	3/18/03 11:00	ASTM D2036	PNM
Fluoride (IC), mg/L	2	1	3/14/03 17:00	EPA 300.0	CSM
Nitrate, Nitrogen (IC), mg/L	550	5	3/14/03 17:00	EPA 300.0	CSM
Nitrite, Nitrogen (IC), mg/L	94	5	3/14/03 17:00	EPA 300.0	CSM
pH, units	7.3	0.1	3/14/03 15:00	EPA 150.1	AK
Sulfate (IC), mg/L	6,200	50	3/14/03 17:00	EPA 300.0	CSM
Barium (T), as Ba, mg/L	0.012	0.005	3/17/03 11:53	EPA 200.7	MJB
Calcium (T), as Ca, mg/L	470	0.2	3/17/03 11:53	EPA 200.7	MJB
Chromium (T), as Cr, mg/L	< 0.005	0.005	3/17/03 11:53	EPA 200.7	MJB
Copper (T), as Cu, mg/L	2.0	0.01	3/17/03 11:53	EPA 200.7	MJB
Magnesium (T), as Mg, mg/L	76	0.2	3/17/03 11:53	EPA 200.7	MJB
Potassium (T), as K, mg/L	160	0.2	3/17/03 11:53	EPA 200.7	MJB
Sodium (T), as Na, mg/L	4,200	4	3/19/03 10:02	EPA 200.7	MJB
Zinc (T), as Zn, mg/L	4.0	0.01	3/17/03 11:53	EPA 200.7	MJB
Arsenic (T), as As, mg/L	0.013	0.005	3/20/03 12:03	EPA 200.8	MJB
Cadmium (T), as Cd, mg/L	0.035	0.005	3/20/03 12:03	EPA 200.8	MJB
Lead (T), as Pb, mg/L	0.28	0.001	3/18/03 12:47	EPA 200.8	MJB
Mercury (T), as Hg, mg/L	0.0043	0.0002	3/18/03 12:47	EPA 200.8	MJB

M = Minimum Reporting Limit

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

Lab No: 03-U002168
Report Date: 3/26/03

JBR Consultants
attn. Jim Sage
8160 South Highland Drive, Ste. A-4
Sandy, UT 84093

CERTIFICATE OF ANALYSIS

Sample Description: Upper Dist Box
Project: NLILY-01
Sample Matrix: WASTE WATER
Lab Group No: 59243
Date/Time Sampled: 3/14/03 , 13:15
Date/Time Received: 3/14/03 , 15:00
Sample Note(s):

Sample received on ice.

PARAMETER / UNITS	RESULT	MRL	DATE ANALYZED	METHOD	ANALYST
INORGANIC PARAMETERS					
Selenium (T), as Se, mg/L	0.14	0.005	3/20/03 12:03	EPA 200.8	MJB
Silver (T), as Ag, mg/L	0.023	0.005	3/20/03 12:03	EPA 200.8	MJB
Temperature, Receiving, C	1.5		3/14/03 15:00	SM 2550B Mod	SPS

L = Minimum Reporting Limit

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

CHEMTECH-FORD, INC.

ANALYSIS REQUEST FORM/CHAIN OF CUSTODY

COMPANY: VBR ENVIRONMENTAL
ADDRESS: 8160 SO HIGHLAND DR.
CITY/STATE/ZIP: SANDY UT 84093
PHONE #: (801)943-4144 FAX #: (801)942-1852
COMPANY CONTACT: JIM SAGE
PROJECT: NCILY-01

BILLING NAME: VBR ENVIRONMENTAL
BILLING ADDRESS: 8160 SO HIGHLAND DR.
P.O. #: SANDY UT 84093
TURNAROUND REQUIRED* STANDARD.
*expedited turnaround subject to additional charge

_____Mark 'X' for copy to DEQ Div of Drinking Water

Lab ID#	SAMPLE IDENTIFICATION/LOCATION	SAMPLE DATE	SAMPLE TIME	Number of Containers	MATRIX: Water: Drink/(Waste) Ground (circle)	MATRIX: Soil / Solid (circle)	MATRIX: Sludge: Solid, Liquid (circle)	MATRIX: Oil	MATRIX: Solvent	MATRIX: Other (specify)	ANALYTES REQUESTED: * See below Group# 57878 020-11571
2168	1. UPPER DIST BOX	03/14/03	13:15	5	X						X
	2.										
	3.										
	4.										
	5.										
	6.										
	7.										
	8.										
	9.										
	10.										

Sampled by: (print) JIM SAGE
Sampled by: (signature)
Sample Receiving Temperature: (C) ON ICE

Special Instructions: SAME AS PREVIOUS SAMPLE METHODS

Sample Delivered by Courier:

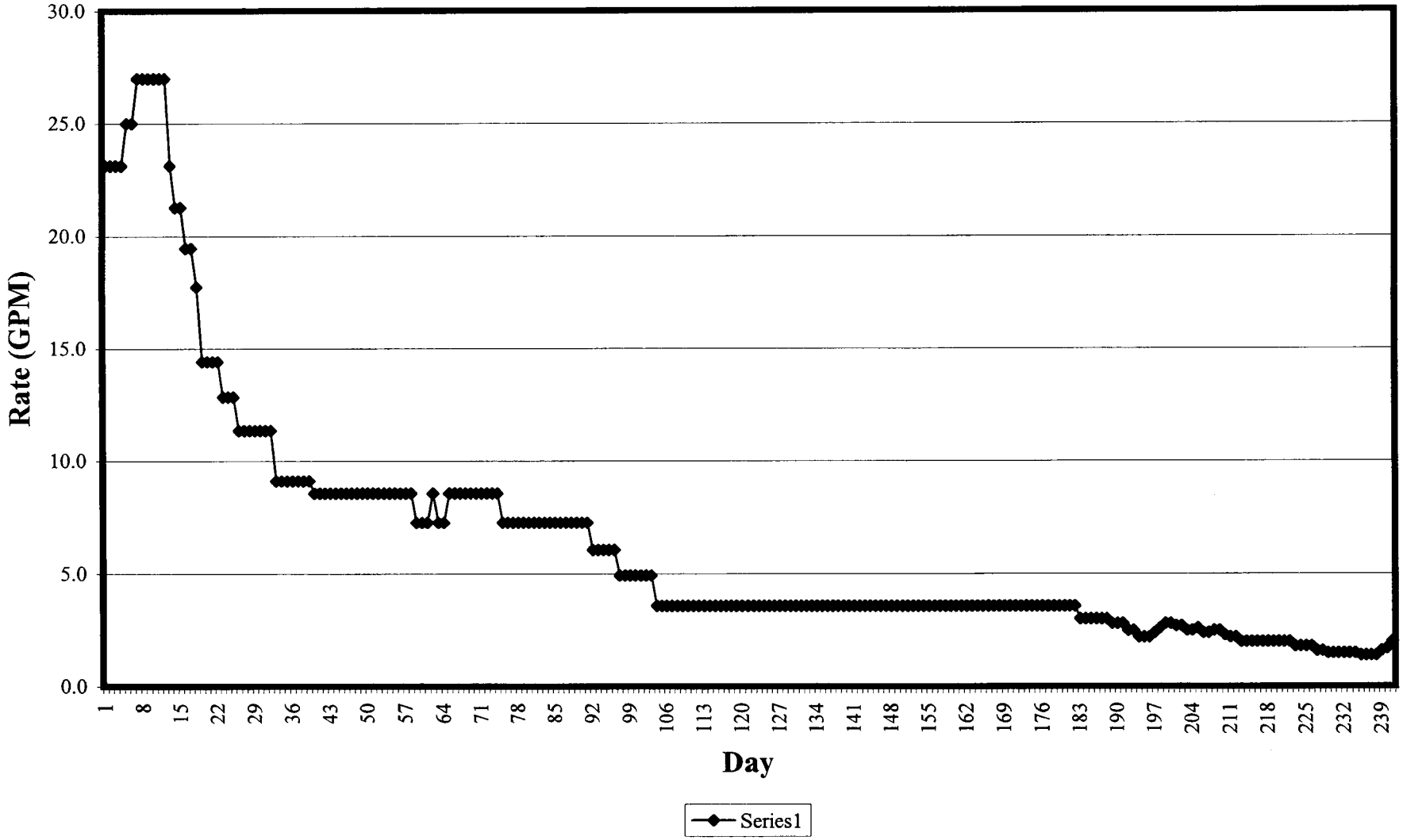
Relinquished by: (signature)	Date/Time	Received by (signature):	Date/Time
	15:00	SP Sommon	3-14-03/1500
Relinquished by: (signature)	Date/Time	Received by (signature):	Date/Time
Relinquished by: (signature)	Date/Time	Received by (signature):	Date/Time

CHEMTECH-FORD, INC. 6100 South Stratler (380 West) Murray, UT 84107 Phone 801-262-7299 Fax 801-262-7378

Appendix B

Heap Leach Discharge

Heap Leach Pad Discharge



North Lily Mining Company

EVAPORATION SYSTEM/LEACH FIELD GALLERY

Date	Daily Average (GPM)	Application Site	Return Rate (Feet)	ReturnRate (GPM)	Amount Pumped From Preg Pond
July 3, 2000	100	N/A	N/A		
July 4, 2000	100	N/A	N/A		
July 5, 2000	100	N/A	N/A		270
July 6, 2000	100	N/A	N/A		
July 7, 2000	100	N/A	N/A		
July 10, 2000	95	N/A	N/A		
July 11, 2000	95	N/A	N/A		
July 12, 2000	90	N/A	N/A		260
July 13, 2000	90	N/A	N/A		
July 14, 2000	95	N/A	N/A		
July 15, 2000	225	N/A	N/A		
July 17, 2000	N/A	Recycle into Preg	N/A		
July 18, 2000	220	N/A	N/A		
July 19, 2000	220	N/A	N/A		250
July 20, 2000	220	N/A	N/A		
July 21, 2000	220	N/A	N/A		
July 24, 2000	N/A	Recycle into Preg	N/A		
July 25, 2000	N/A	Recycle into Preg	N/A		280
July 26, 2000	300	Pad and Preg	N/A		
July 27, 2000	300	Pad and Preg	N/A		
July 28, 2000	300	Pad and Preg	N/A		
July 30, 2000	N/A	Recycle into Preg	0.24		
July 31, 2000	N/A	Overflow	0.24		
August 1, 2000	N/A	Overflow	0.24		270
August 2, 2000	N/A	Overflow	0.22		
August 3, 2000	N/A	Overflow	0.22		
August 6, 2000	N/A	Rec	N/A		
August 7, 2000	N/A	Rec	N/A		300
August 8, 2000	360	Pad and Preg	N/A		
August 9, 2000	360	Pad and Preg	N/A		
August 10, 2000	360	Pad and Preg	N/A		200
August 11, 2000	360	Pad and Preg	N/A		
August 12, 2000	360	Pad and Preg	N/A		
August 13, 2000	360	Rec	0.19	23.1	
August 14, 2000	360	Rec	0.19	23.1	
August 15, 2000	360	Rec	0.19	23.1	
August 16, 2000	360	Rec	0.19	23.1	490
August 17, 2000	360	Rec	0.2	25.0	
August 18, 2000	360	Rec	0.2	25.0	
August 19, 2000	360	Rec	0.21	27.0	
August 20, 2000	340	Rec	0.21	27.0	
August 21, 2000	340	Rec	0.21	27.0	
August 22, 2000	340	Rec	0.21	27.0	
August 23, 2000	340	Rec	0.21	27.0	
August 24, 2000	340	Rec	0.21	27.0	500
August 27, 2000	350	Preg and Overflow	0.19	23.1	

KEY
N/R = Not Recorded
N/A = Not Avaliable

North Lily Mining Company

EVAPORATION SYSTEM/LEACH FIELD GALLERY

Date	Daily Average (GPM)	Application Site	Return Rate (Feet)	ReturnRate (GPM)	Amount Pumped From Preg Pond
August 28, 2000	220	Preg and Overflow	0.18	21.3	
August 29, 2000	220	Preg and Overflow	0.18	21.3	
August 30, 2000	340	Preg and Overflow	0.17	19.5	
August 31, 2000	200	Preg and Overflow	0.17	19.5	475
September 1, 2000	210	Preg and Overflow	0.16	17.7	
September 5, 2000	N/A	Recycle to preg pond	0.14	14.4	
September 6, 2000	N/A	Recycle to preg pond	0.14	14.4	
September 7, 2000	N/A	Recycle to preg pond	0.14	14.4	500
September 8, 2000	N/A	Recycle to preg pond	0.14	14.4	
September 9, 2000	N/A	Recycle to preg pond	0.13	12.8	
September 10, 2000	N/A	Recycle to preg pond	0.13	12.8	
September 11, 2000	N/A	Overflow Ponds	0.13	12.8	
September 12, 2000	N/A	Overflow Ponds	0.12	11.3	
September 13, 2000	N/A	Overflow Ponds	0.12	11.3	480
September 14, 2000	N/A	Overflow Ponds	0.12	11.3	
September 15, 2000	N/A	Overflow Ponds	0.12	11.3	
September 16, 2000	N/A	Overflow Ponds	0.12	11.3	
September 18, 2000	N/A	Recycle to preg pond	0.12	11.3	
September 19, 2000	N/A	Recycle to preg pond	0.12	11.3	
September 20, 2000	N/A	Recycle to preg pond	0.11	9.1	490
September 21, 2000	N/A	Recycle to preg pond	0.11	9.1	
September 22, 2000	N/A	Recycle to preg pond	0.11	9.1	
September 23, 2000	N/A	Recycle to preg pond	0.11	9.1	
September 25, 2000	N/A	Recycle to preg pond	0.11	9.1	
September 26, 2000	N/A	Recycle to preg pond	0.11	9.1	
September 27, 2000	N/A	Recycle to preg pond	0.11	9.1	475
September 28, 2000	N/A	Recycle to preg pond	0.10	8.6	
September 29, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 2, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 3, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 4, 2000	N/A	Recycle to preg pond	0.10	8.6	469
October 5, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 6, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 9, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 10, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 11, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 12, 2000	N/A	Recycle to preg pond	0.10	8.6	490
October 13, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 16, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 17, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 18, 2000	N/A	Recycle to preg pond	0.10	8.6	480
October 19, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 20, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 23, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 24, 2000	N/A	Recycle to preg pond	0.10	8.6	
October 25, 2000	N/A	Recycle to preg pond	0.09	7.3	440

KEY
N/R = Not Recorded
N/A = Not Avaliable

North Lily Mining Company

EVAPORATION SYSTEM/LEACH FIELD GALLERY

Date	Daily Average (GPM)	Application Site	Return Rate (Feet)	ReturnRate (GPM)	Amount Pumped From Preg Pond
October 26, 2000	N/A	Recycle to preg pond	0.09	7.3	
October 27, 2000	N/A	Recycle to preg pond	0.09	7.3	
November 6, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 7, 2000	N/A	Recycle to preg pond	0.09	7.3	
November 8, 2000	N/A	Recycle to preg pond	0.09	7.3	390
November 9, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 10, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 13, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 14, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 15, 2000	N/A	Recycle to preg pond	0.10	8.6	390
November 16, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 17, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 20, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 21, 2000	N/A	Recycle to preg pond	0.10	8.6	
November 22, 2000	N/A	Recycle to preg pond	0.10	8.6	350
November 23, 2000	N/A	Recycle to preg pond	0.09	7.3	
November 24, 2000	N/A	Recycle to preg pond	0.09	7.3	
November 27, 2000	N/A	Recycle to preg pond	0.09	7.3	
November 28, 2000	N/A	Recycle to preg pond	0.09	7.3	
November 29, 2000	N/A	Recycle to preg pond	0.09	7.3	
November 30, 2000	N/A	Recycle to preg pond	0.09	7.3	300
December 1, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 4, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 5, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 6, 2000	N/A	Recycle to preg pond	0.09	7.3	300
December 7, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 8, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 11, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 12, 2000	N/A	Recycle to preg pond	0.09	7.3	300
December 13, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 14, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 15, 2000	N/A	Recycle to preg pond	0.09	7.3	
December 18, 2000	N/A	Recycle to preg pond	0.08	6.1	
December 19, 2000	N/A	Recycle to preg pond	0.08	6.1	
December 20, 2000	N/A	Recycle to preg pond	0.08	6.1	290
December 21, 2000	N/A	Recycle to preg pond	0.08	6.1	
December 22, 2000	N/A	Recycle to preg pond	0.08	6.1	
December 26, 2000	N/A	Recycle to preg pond	0.07	4.9	
December 27, 2000	N/A	Recycle to preg pond	0.07	4.9	
December 28, 2000	N/A	Recycle to preg pond	0.07	4.9	290
December 29, 2000	N/A	Recycle to preg pond	0.07	4.9	
January 2, 2001	N/A	Recycle to preg pond	0.07	4.9	
January 3, 2001	N/A	Recycle to preg pond	0.07	4.9	
January 4, 2001	N/A	Recycle to preg pond	0.07	4.9	280
January 5, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 8, 2001	N/A	Pump was off	0.06	3.6	

KEY
N/R = Not Recorded
N/A = Not Avaliable

North Lily Mining Company

EVAPORATION SYSTEM/LEACH FIELD GALLERY

Date	Daily Average (GPM)	Application Site	Return Rate (Feet)	ReturnRate (GPM)	Amount Pumped From Preg Pond
January 9, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 10, 2001	N/A	Recycle to preg pond	0.06	3.6	285
January 11, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 12, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 15, 2001	N/A	Pump was off	0.06	3.6	
January 16, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 17, 2001	N/A	Recycle to preg pond	0.06	3.6	270
January 18, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 19, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 22, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 23, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 24, 2001	N/A	Recycle to preg pond	0.06	3.6	290
January 25, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 26, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 29, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 30, 2001	N/A	Recycle to preg pond	0.06	3.6	
January 31, 2001	N/A	Recycle to preg pond	0.06	3.6	285
February 1, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 2, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 5, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 6, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 7, 2001	N/A	Recycle to preg pond	0.06	3.6	285
February 8, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 9, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 12, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 13, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 14, 2001	N/A	Recycle to preg pond	0.06	3.6	320
February 15, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 16, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 17, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 19, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 20, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 21, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 22, 2001	N/A	Recycle to preg pond	0.06	3.6	310
February 23, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 26, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 27, 2001	N/A	Recycle to preg pond	0.06	3.6	
February 28, 2001	N/A	Recycle to preg pond	0.06	3.6	290
March 1, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 2, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 5, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 6, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 7, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 8, 2001	N/A	Recycle to preg pond	0.06	3.6	280
March 9, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 12, 2001	N/A	Recycle to preg pond	0.06	3.6	

KEY
N/R = Not Recorded
N/A = Not Avaliable

North Lily Mining Company

EVAPORATION SYSTEM/LEACH FIELD GALLERY

Date	Daily Average (GPM)	Application Site	Return Rate (Feet)	ReturnRate (GPM)	Amount Pumped From Preg Pond
March 13, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 14, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 15, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 16, 2001	N/A	Recycle to preg pond	0.06	3.6	280
March 19, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 20, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 21, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 22, 2001	N/A	Recycle to preg pond	0.06	3.6	280
March 23, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 26, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 27, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 28, 2001	N/A	Recycle to preg pond	0.06	3.6	
March 29, 2001	N/A	Recycle to preg pond	0.06	3.6	290
March 30, 2001	N/A	Recycle to preg pond	0.06	3.6	
April 2, 2001	N/A	Recycle to preg pond	0.06	3.6	
April 3, 2001	N/A	Recycle to preg pond	0.06	3.6	
April 4, 2001	N/A	Recycle to preg pond	0.06	3.6	
April 5, 2001	N/A	Recycle to preg pond	0.06	3.6	270
April 6, 2001	N/A	Recycle to preg pond	0.06	3.6	
May, 2001 Week 1	N/A	Drain Field	N/A	3.6	N/A
May, 2001 Week 2	N/A	Drain Field	N/A	3.6	N/A
May, 2001 Week 3	N/A	Drain Field	N/A	3.6	N/A
May, 2001 Week 4	N/A	Drain Field	N/A	3.6	N/A
June 6, 2001	N/A	Drain Field	N/A	3.6	N/A
June 13, 2001	N/A	Drain Field	N/A	3.6	N/A
June 20, 2001	N/A	Drain Field	N/A	3.6	N/A
June 27, 2001	N/A	Drain Field	N/A	3.6	N/A
July 3, 2001	N/A	Drain Field	N/A	3.6	N/A
July 11, 2001	N/A	Drain Field	N/A	3.6	N/A
July 18, 2001	N/A	Drain Field	N/A	3.6	N/A
July 23, 2001	N/A	Drain Field	N/A	3.6	N/A
August 1, 2001	N/A	Drain Field	N/A	3.0	N/A
August 8, 2001	N/A	Drain Field	N/A	3.0	N/A
August 15, 2001	N/A	Drain Field	N/A	3.0	N/A
August 21, 2001	N/A	Drain Field	N/A	3.0	N/A
August 29, 2001	N/A	Drain Field	N/A	3.0	N/A
October 17, 2001	N/A	Drain Field	N/A	3.0	N/A
October 24, 2001	N/A	Drain Field	N/A	2.8	N/A
November 1, 2001	N/A	Drain Field	N/A	2.8	N/A
November 7, 2001	N/A	Drain Field	N/A	2.8	N/A
November 12, 2001	N/A	Drain Field	N/A	2.5	N/A
November 20, 2001	N/A	Drain Field	N/A	2.5	N/A
December 1, 2001	N/A	Drain Field	N/A	2.2	N/A
December 6, 2001	N/A	Drain Field	N/A	2.2	N/A
December 15, 2001	N/A	Drain Field	N/A	2.2	N/A
December 22, 2001	N/A	Drain Field	N/A	2.4	N/A

KEY
N/R = Not Recorded
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North Lily Mining Company

EVAPORATION SYSTEM/LEACH FIELD GALLERY

Date	Daily Average (GPM)	Application Site	Return Rate (Feet)	ReturnRate (GPM)	Amount Pumped From Preg Pond
December 29, 2001	N/A	Drain Field	N/A	2.6	N/A
January 2, 2002	N/A	Drain Field	N/A	2.8	N/A
January 9, 2002	N/A	Drain Field	N/A	2.8	N/A
January 17, 2002	N/A	Drain Field	N/A	2.7	N/A
January 23, 2002	N/A	Drain Field	N/A	2.7	N/A
January 31, 2002	N/A	Drain Field	N/A	2.5	N/A
February 5, 2002	N/A	Drain Field	N/A	2.5	N/A
February 13, 2002	N/A	Drain Field	N/A	2.6	N/A
February 20, 2002	N/A	Drain Field	N/A	2.4	N/A
March 1, 2002	N/A	Drain Field	N/A	2.4	N/A
March 6, 2002	N/A	Drain Field	N/A	2.5	N/A
March 12, 2002	N/A	Drain Field	N/A	2.5	N/A
March 20, 2002	N/A	Drain Field	N/A	2.3	N/A
March 27, 2002	N/A	Drain Field	N/A	2.2	N/A
April 5, 2002	N/A	Drain Field	N/A	2.2	N/A
April 10, 2002	N/A	Drain Field	N/A	2.0	N/A
April 17, 2002	N/A	Drain Field	N/A	2.0	N/A
April 25, 2002	N/A	Drain Field	N/A	2.0	N/A
May 2, 2002	N/A	Drain Field	N/A	2.0	N/A
May 7, 2002	N/A	Drain Field	N/A	2.0	N/A
May 15, 2002	N/A	Drain Field	N/A	2.0	N/A
May 23, 2002	N/A	Drain Field	N/A	2.0	N/A
May 28, 2002	N/A	Drain Field	N/A	2.0	N/A
June 4, 2002	N/A	Drain Field	N/A	2.0	N/A
June 12, 2002	N/A	Drain Field	N/A	2.0	N/A
June 19, 2002	N/A	Drain Field	N/A	1.8	N/A
June 26, 2002	N/A	Drain Field	N/A	1.8	N/A
July 3, 2002	N/A	Drain Field	N/A	1.8	N/A
July 9, 2002	N/A	Drain Field	N/A	1.8	N/A
July 17, 2002	N/A	Drain Field	N/A	1.6	N/A
July 24, 2002	N/A	Drain Field	N/A	1.6	N/A
July 31, 2002	N/A	Drain Field	N/A	1.5	N/A
August 8, 2002	N/A	Drain Field	N/A	1.5	N/A
August 14, 2002	N/A	Drain Field	N/A	1.5	N/A
August 21, 2002	N/A	Drain Field	N/A	1.5	N/A
August 29, 2002	N/A	Drain Field	N/A	1.5	N/A
September 4, 2002	N/A	Drain Field	N/A	1.5	N/A
September 12, 2002	N/A	Drain Field	N/A	1.4	N/A
September 19, 2002	N/A	Drain Field	N/A	1.4	N/A
September 25, 2002	N/A	Drain Field	N/A	1.4	N/A
October 5, 2002	N/A	Drain Field	N/A	1.4	N/A
November 2, 2002	N/A	Drain Field	N/A	1.6	N/A
December 7, 2002	N/A	Drain Field	N/A	1.7	N/A
March 22, 2003	N/A	Drain Field	N/A	2	N/A

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Appendix C

Field Notes

NORTH LILY FIRST BI-ANNUAL SAMPLE EVENT

03/21/03

I ARRIVED ON THE SITE AT 1300 AT WHICH TIME I PERFORMED A SITE INSPECTION. THE PERIMETER FENCE WAS INTACT AND NO DAMAGE WAS IDENTIFIED. VERY FEW GRASS CLUMPS WERE THE ONLY SIGNS OF PLANT GROWTH/LIFE. THIS WAS BROAD LEAF GRASS, SIMILAR TO WHAT CRAB GRASS LOOKS LIKE.

@ 1315 I ACQUIRED THE H_2O SAMPLES AT THE UPPER DISTRIBUTION BOX. THE DISCHARGE WATER WAS CLEAR WITH A SLIGHT YELLOW TINGE. THE DISCHARGE WAS CALCULATED @ ≈ 2.0 GPM. THE SAMPLE WAS DELIVERED TO CHEMTECH FORD ON ICE @ 1500.

This page is a reference page used to track documents internally for the Division of Oil, Gas and Mining

Mine Permit Number M0230007 Mine Name North Lily - Tintic Project
Operator North Lily Mining Company Date April 16, 2003
TO Wayne Hedburg FROM James R. Sage III

__CONFIDENTIAL __BOND CLOSURE __LARGE MAPS X_EXPANDABLE
__MULTIPUL DOCUMENT TRACKING SHEET __NEW APPROVED NOI
__AMENDMENT _OTHER_____

Description YEAR-Record Number

__NOI X_Incoming __Outgoing __Internal __Superceded

1st Semi Annual 2003 Discharge Report
Heap Leach

___NOI __Incoming __Outgoing __Internal __Superceded

__NOI __Incoming __Outgoing __Internal __Superceded

__NOI __Incoming __Outgoing __Internal __Superceded

__TEXT/ 81/2 X 11 MAP PAGES __11 X 17 MAPS __LARGE MAP

COMMENTS: _____

CC: _____